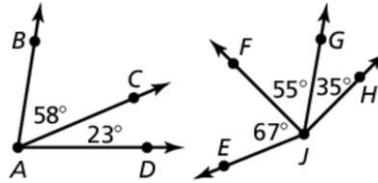


# 1.6

## Practice A

In Exercises 1–3, use the figures.

1. Name a pair of adjacent complementary angles.
2. Name a pair of nonadjacent complementary angles.
3. Name a pair of nonadjacent supplementary angles.



In Exercises 4 and 5, find the angle measure.

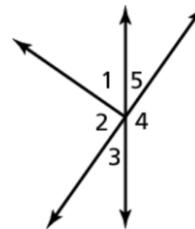
4.  $\angle 1$  is a complement of  $\angle 2$ , and  $m\angle 2 = 36^\circ$ . Find  $m\angle 1$ .
5.  $\angle 3$  is a supplement of  $\angle 4$ , and  $m\angle 4 = 75^\circ$ . Find  $m\angle 3$ .

In Exercises 6 and 7, find the measure of each angle.

6.  $\angle WXY$  and  $\angle YXZ$  are supplementary angles,  $m\angle WXY = (6x + 59)^\circ$ , and  $m\angle YXZ = (3x - 14)^\circ$ .
7.  $\angle ABC$  and  $\angle CBD$  are complementary angles,  $m\angle ABC = (3x + 6)^\circ$ , and  $m\angle CBD = (4x - 14)^\circ$ .

In Exercises 8–10, use the figure.

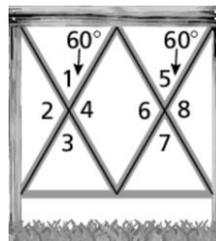
8. Identify the linear pairs that include  $\angle 5$ .
9. Are  $\angle 3$  and  $\angle 5$  vertical angles? Explain your reasoning.
10. Are  $\angle 2$  and  $\angle 4$  vertical angles? Explain your reasoning.



In Exercises 11–13, write and solve an algebraic equation to find the measure of each angle based on the given description.

11. Two angles form a linear pair. The measure of one angle is  $24^\circ$  more than the measure of the other angle.
12. The measure of an angle is three times the measurement of its complement.
13. The measure of one angle is 15 less than half the measurement of its supplement.
14. The figure shows the design on an outdoor fence.

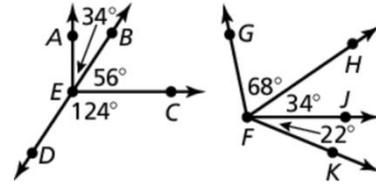
- a. Name a pair of adjacent supplementary angles.
- b. Name a pair of nonadjacent supplementary angles.
- c. Identify the linear pairs that include  $\angle 5$ .
- d. Find  $m\angle 3$ . Explain your reasoning.



# 1.6 Practice B

In Exercises 1–3, use the figures.

1. Name a pair of adjacent complementary angles.
2. Name a pair of nonadjacent complementary angles.
3. Name a pair of nonadjacent supplementary angles.



In Exercises 4 and 5, find the angle measure.

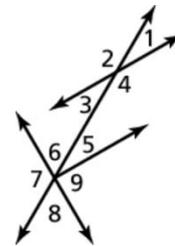
4.  $\angle 1$  is a complement of  $\angle 2$ , and  $m\angle 2 = 71^\circ$ . Find  $m\angle 1$ .
5.  $\angle 3$  is a supplement of  $\angle 4$ , and  $m\angle 4 = 26.7^\circ$ . Find  $m\angle 3$ .

In Exercises 6 and 7, find the measure of each angle.

6.  $\angle ABC$  and  $\angle CBD$  are supplementary angles,  $m\angle ABC = 7x^\circ$  and  $m\angle CBD = 8x^\circ$ .
7.  $\angle WXY$  and  $\angle YXZ$  are complementary angles,  $m\angle WXY = (2x + 5)^\circ$ , and  $m\angle YXZ = (8x - 5)^\circ$ .

In Exercises 8–11, use the figure.

8. Identify the linear pair(s) that include  $\angle 2$ .
9. Identify the linear pair(s) that include  $\angle 8$ .
10. Are  $\angle 6$  and  $\angle 8$  vertical angles? Explain your reasoning.
11. Are  $\angle 7$  and  $\angle 9$  vertical angles? Explain your reasoning.



In Exercises 12–14, write and solve an algebraic equation to find the measure of each angle based on the given description.

12. The measure of an angle is 9 more than twice its complement.
13. Two angles form a linear pair. The measure of one angle is four times the measure of the other angle.
14. Two angles form a linear pair. The measure of one angle is  $51^\circ$  more than  $\frac{1}{2}$  the measure of the other angle.

In Exercises 15 and 16, tell whether the statement is *always*, *sometimes*, or *never* true. Explain your reasoning.

15. The sum of the measures of a linear pair of angles is  $90^\circ$ .
16. The sum of the measures of a pair of vertical angles is  $180^\circ$ .